

## CLAIMS:

1. A method of ameliorating or preventing damage caused by cigarette smoke, comprising:  
administering substance P or a bioactive analog thereof via aerosol inhalation to a subject who has or will be exposed to cigarette smoke, wherein the bioactive analog is selected from the group consisting of [Met-OH11]-substance P, [Met-OMe11]-substance P, [Nle11]-substance P, [Pro9]-substance P, [Sar9]-substance P, [Tyr8]-substance P, [p-CI-Phe7,8]-substance P, and [Sar9, Met (02)11]-substance P.
2. The method of claim 1 wherein the subject has been exposed to cigarette smoke.
3. The method of claim 1 wherein the subject has been exposed to side-stream cigarette smoke.
4. The method of claim 1 wherein the subject is exposed to cigarette smoke subsequent to substance P aerosol inhalation.
5. The method of claim 1 wherein the substance P is administered at 0.1 to 10  $\mu$ M.
6. The method of claim 1 wherein the substance P is administered at 0.5 to 5  $\mu$ M.
7. The method of claim 4 wherein the cigarette smoke is side-stream cigarette smoke.
8. The method of claim 1 wherein the cigarette smoke is main-stream cigarette smoke.
9. The method of claim 1 wherein the substance P is administered in an amount sufficient to prevent micronuclei formation in the subject's bone marrow cells.
10. The method of claim 1 wherein the substance P is administered in an amount sufficient to prevent micronuclei formation in the subject's blood cells.
11. The method of claim 1 wherein the substance P is administered in an amount sufficient to increase dynamic lung compliance.

12. The method of claim 1 wherein the substance P is administered in an amount sufficient to prevent damage or remedy damage to basement membrane of endothelial cells of airways.

13. A method of ameliorating or preventing damage caused by cigarette smoke, comprising:

administering substance P or a bioactive analog thereof via a filter of a cigarette, cigar or other smoking product to a subject, wherein the bioactive analog is selected from the group consisting of [Met-OH11]-substance P, [Met-OMell]-substance P, [Nlell]-substance P, [Pro9]-substance P, [Sar9]-substance P, [Tyr8]-substance P, [p-Cl-Phe7,8]-substance P, and [Sar9, Met (02)11]-substance P.

14. The method of claim 13 wherein the substance P is administered in an amount sufficient to prevent micronuclei formation in the subject's bone marrow cells.

15. The method of claim 13 wherein the substance P is administered in an amount sufficient to prevent micronuclei formation in the subject's blood cells.

16. The method of claim 13 wherein the substance P is administered in an amount sufficient to increase dynamic lung compliance.

17. The method of claim 13 wherein the substance P is administered in an amount sufficient to prevent damage or remedy damage to basement membrane of endothelial cells of airways.

18. A method of ameliorating or preventing damage caused by cigarette smoke, comprising:

administering substance P or a bioactive analog thereof via a gum or lozenge to a subject who has or will be exposed to cigarette smoke, wherein the bioactive analog is selected from the group consisting of [Met-OH11]-substance P, [Met-OMell]-substance P, [Nlell]-substance P, [Pro9]-substance P, [Sar9]-substance P, [Tyr8]-substance P, [p-Cl-Phe7,8]-substance P, and [Sar9, Met (02)11]-substance P.

19. The method of claim 18 wherein the subject has been exposed to cigarette smoke.

20. The method of claim 18 wherein the subject has been exposed to side-stream cigarette smoke.

21. The method of claim 18 wherein the subject is exposed to cigarette smoke subsequent to administration of the gum or lozenge.
22. The method of claim 18 wherein the substance P is at a concentration of 0.1 to 10  $\mu$ M.
23. The method of claim 18 wherein the substance P is at a concentration of 0.5 to 5  $\mu$ M.
24. The method of claim 18 wherein the cigarette smoke is side-stream cigarette smoke.
25. The method of claim 18 wherein the cigarette smoke is main-stream cigarette smoke.
26. The method of claim 18 wherein the substance P is administered in an amount sufficient to prevent micronuclei formation in the subject's bone marrow cells.
27. The method of claim 18 wherein the substance P is administered in an amount sufficient to prevent micronuclei formation in the subject's blood cells.
28. The method of claim 18 wherein the substance P is administered in an amount sufficient to increase dynamic lung compliance.
29. The method of claim 18 wherein the substance P is administered in an amount sufficient to prevent damage or remedy damage to basement membrane of endothelial cells of airways.
30. A cigarette filter comprising substance P or a bioactive analog thereof.
31. A gum or lozenge comprising substance P or a bioactive analog thereof.
32. A method of ameliorating or preventing damage caused by cigarette smoke, comprising:  
administering a polynucleotide to a human or animal, said polynucleotide encoding a secretable substance P protein or a bioactive analog  
wherein the bioactive analog is selected from the group consisting of [Met-OH11]-substance P, [Met-OMell]-substance P, [Nlell]-substance P, [Pro9]-substance P, [Sar9]-substance P, [Tyr8]-substance P, [p-Cl-Phe7,8]-substance P, and [Sar9, Met (02)11]-substance P.
33. The method of claim 32 wherein the subject has been exposed to cigarette smoke.

34. The method of claim 32 wherein the subject has been exposed to side-stream cigarette smoke.
35. The method of claim 32 wherein the substance P is secreted in an amount sufficient to prevent micronuclei formation in the subject's bone marrow cells.
36. The method of claim 32 wherein the substance P is secreted in an amount sufficient to prevent micronuclei formation in the subject's blood cells.
37. The method of claim 32 wherein the substance P is secreted in an amount sufficient to increase dynamic lung compliance.
38. The method of claim 32 wherein the polynucleotide is administered via a viral vector.
39. The method of claim 32 wherein the polynucleotide is administered via the nose.
40. The method of claim 32 wherein the polynucleotide is administered via inhalation.
41. The method of claim 32 wherein the polynucleotide is administered to the lungs.